



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,316	07/13/2004	Gabriele Pecorari	9436-92499	6125

24628 7590 03/16/2007
WELSH & KATZ, LTD
120 S RIVERSIDE PLAZA
22ND FLOOR
CHICAGO, IL 60606

EXAMINER

WEINSTEIN, LEONARD J

ART UNIT	PAPER NUMBER
----------	--------------

3746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/501,316

Applicant(s)

PECORARI, GABRIELE

Examiner

Leonard J. Weinstein

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/13/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/13/04 & 12/5/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings, figures 1 and 5, are objected to for the following:
 - a. 37 CFR 1.84 (h)(3) – *Sectional Views*. Elements 43 of figures 1 and 5, and elements 50, 52, and 53 (both) reference sectional views to respective components of the claimed invention that should be hatched.
2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1 and 15 objected to because of the following informalities because the claim recites the limitation of a “thrust ring” coupled to an element of the claimed invention that rotates. In the prior claim submission, which included the reference numerals by limitations as

Art Unit: 3746

claimed, 28 was used for both a "thrust ring," and an "rotating inner ring." The rotating ring was claimed to be a part of a bearing that the "thrust ring" was in combination with. The limitation in claim 1 of a thrust ring would not lead one of ordinary skill in the art to ascertain that the "rotating ring" of the bearing was the same element as suggested by original claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "bucking" in claims 1 and 23 is used by the claim to mean "limit," or "oppose," while the accepted meaning is "bucking by a horse, when the animal raises his hind end and kicks out with both hind legs." The term is indefinite because the specification does not clearly redefine the term.
6. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: "a hydraulically operated speed variator, characterized

Art Unit: 3746

in that it incorporates at least one machine.” One of ordinary skill in the art would not be able to ascertain how a variator would be operatively engaged to the radial piston pump, as well as the structure of an engagement or linkage between a variator and the invention as claimed.

Lack of rejection the prior art should not be interpreted as an indication of allowability.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 4, 6, 10, 14-15, 17-20 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Thoma 5,848,565. Thoma teaches all the limitations as substantially claimed for a radial piston pump including: a rotary displacement machine, figure 1, a supporting structure 3, a centrally mounted distributor 40, a rotating unit 10 consisting of a rotor 26 provided with a number of radially extending cylindrical chambers 50, wherein each chamber 50 contains a respective piston 52 mounted for sliding movement in a first direction along a first axis coaxial with the longitudinal centerline, figure 1 – I, of the respective cylindrical chamber 50, and means 53 of bucking the radial thrust from the pistons 52, said means forming a bearing 66 in combination with a thrust ring, 53 and 60, the rotary displacement machine, figure 1, and said bearing 66 comprises a rotating inner ring 53 and 60, a stationary outer ring, 65 of 66, and intervening rolling means (col. 4 ll. 60-65), said rotating inner ring, 53 and 60, including engagement means, 67 and 68, for each piston 52, said engagement means, 61, allowing movement in a straight line, see figure 2, along a first direction defined by a second axis, characterized by the movement of a bearing face of piston 52 with 53 being linear, figure 2

Art Unit: 3746

(col. 4 ll. 66-67 and col. 4 ll. 1-3) figure 2, perpendicular to said first axis; an engagement means, 61 via 62, 63, 67, 68 that are sliding engagement means; wherein the force of the piston is transferred to the thrust ring through a hydraulically balanced end surface 50 (col. 4 ll. 60-65); at least one of said pistons 52 facing a distributor, with a face 50 shaped to fill unwanted clearance 51; at least one bearing 8, being an integral bearing; at least one bearing 8 mounts a plurality of rolling bodies in interference fit relationship, figure 1; a rotor 10 and thrust ring, 53 and 60, are controlled to rotate synchronously by a synchronization device 22; a distributor 14 is mounted floating in the portion carrying the cover 3 (col. 4 ll. 4-18); at least a surface portion of a recess 34 provided on the rotor 10 has a conical shape allowing said surface portions to fit together in different ways (col. 3 ll. 63-67); seal rings, 43 and 41, and of metal are arranged to stop oil from leaking through the clearance gap between the outer surface of the distributor 14 and the surface 12 of said hole in said cover 3; and a hydraulically operated speed variator that incorporates a radial piston pump.

9. Claims 1, 5, 7-8, 22, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Thoma et al. 5,503,535. Thoma et al. teaches all the limitations as substantially claimed for a radial piston machine including: a supporting structure, 1 and 2, a centrally mounted distributor 5, a rotating unit consisting of a rotor 4 provided with a number of radially extending cylindrical chambers 90, wherein each chamber 90 contains a respective piston 93 mounted for sliding movement in a first direction along a first axis coaxial with the longitudinal centerline of the respective cylindrical chamber 90, figure 2, and means for bucking the radial thrust from the piston 93 forming a bearing 94 in combination with a thrust ring 105, the rotary displacement, said bearing 94 comprises a rotating inner ring 94, a stationary outer ring 105, and intervening rolling means 100, 101, said rotating inner ring 94 including engagement means, 108, 109, and

Art Unit: 3746

110 for each piston 93, and said engagement means, 108, 109, and 110 allowing movement in a straight line along a first direction defined by a second axis perpendicular to said first axis, figure 2; at least one piston 93 is provided with a closed seal ring, journal portion of element 93 just above a piston head in contact with element 91, figure 1; at least one piston 93 is formed with at least one lightening hole, bottom face of element 94 of element 93 on both sides of element 95, having a longitudinal axis extending transverse to the axis of the piston 93 and does not cross a hydraulic balancing hole 95 formed in the piston 93; a cover, 1 and 2 which carries an intake device 65 and a discharge device 75, said intake 65 and discharge 75 devices being each formed with a respectively, offset groove, elements 171 and 170, from a centerline of the distributor, area housing element 130; and at least one of the bearings 33 for the rotor 4 and/or for coupling the inner and outer rings together provides frictional drag in which sliding means are provided which comprise at least one layer of an anti-friction plastics material bonded, through an additional layer of a porous metal, to one of the contacting parts or another intervening metal element (col. 4 ll. 1-11).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 3746

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 21 is rejected under 35 U.S.C. 102(a) as being unpatentable over Thoma 5,848,565 in view of Thoma et al. 5,503,535. Thoma '565 teaches all the limitations as discussed but fails to teach the following claimed limitation taught by Thoma et al. '535 for a radial piston machine having rings being received each in a respective annular seat, elements 33 and 34 in elements 1 and 2, formed in the surface of said hole, figure 1 hole receiving element 4. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the receiving recess of a distributor for the radial piston pump of Thoma '565 with the inner journal and flange of Thoma '535 to provide a thrust bearing made of a porous powder metal (col. 4 ll. 1-11).

13. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thoma et al. 5,503,535 in view of Mowbray 4,635,853. Thoma et al. '535 teaches all the limitations as discussed but fails to teach a rotor having a nitrided surface in the area a coupling to a distributor. Mowbray teaches a nozzle receiving a pintle being made of a ceramic material such as nitride sleeve. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a nitrided surface to the rotor of Thoma '535 in order to provide a thin layer of ceramic material for a bearing surface to reduce any problems encountered during manufacturing (Mowbray col. 2 ll. 30-46).

Allowable Subject Matter

14. Claims 3, 9, 11-13, and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 3746

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are cited on form 892 herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. Weinstein whose telephone number is 571-272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LJW

03/07/2007



ANTHONY D. STASHICK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700